

Before the
FEDERAL COMMUNICATIONS COMMISSION
 Washington, D.C. 20554

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In the Matter of)
)
 REGIONET WIRELESS LICENSE, LLC)
)
 Amendment of Part 80 of the)
 Commission's Rules Concerning)
 Automated Maritime)
 Telecommunications System Stations)

RM-9664

To: The Commission

COMMENTS OF KM COMMUNICATIONS, INC.

KM Communications, Inc. ("KM"), by its counsel, and pursuant to Section 1.405(a) of the Commission's Rules, 47 C.F.R. § 1.405(a), respectfully submits these Comments in response to the petition for rulemaking ("Petition") filed by RegioNet Wireless License, LLC ("RegioNet") in the above-captioned proceeding.¹

I. Background and Introduction.

1. KM is the licensee of low power television ("LPTV") station WOCK-LP, Channel 13, Chicago, Illinois. As the licensee of a television Channel 13 station that potentially could be affected by any change in the Commission's Part 80 rules governing Automated Maritime Telecommunications System ("AMTS") stations -- particularly the Commission's technical rules

¹ See RegioNet Wireless License, LLC, Amendment of Part 80 of the Commission's Rules Concerning Automated Maritime Telecommunications System Stations, RM-9664, filed May 12, 1999, by RegioNet. Statements in support of or opposition to the Petition may be filed on or before July 16, 1999. See Public Notice, Report No. 2340 (released June 16, 1999). Therefore, these comments are timely filed.

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intended to preclude AMTS interference to existing television Channel 13 stations -- and is entitled to protection under those rules,² KM is an interested party in this proceeding. See § 1.405(a).

2. RegioNet repeatedly suggests that since there has been no documented cases (or alternately maybe that there has been only one case) of actual interference by AMTS stations to television Channel 13 stations, and therefore the interference protection rules could just be eliminated. See Petition at 5, 10-11. KM submits that the lack of actual interference is likely due to the existing interference protection rules, and therefore elimination of those rules would be completely illogical. Even RegioNet cites a Commission finding that perceptible interference will be caused by AMTS absent "precautionary technical measures". Id. at 4.

3. Alternatively, RegioNet suggests that the technical parameters upon which the interference rules were based, when adopted years ago, were too conservative and may no longer be valid, and therefore the rules should be amended to relax the restrictions. Id. at 8-9, 12-13. KM is not opposed to amendment of the interference protection rules for AMTS, if such amendment is based on a valid study of the potential for actual interference, conducted by the Commission or some other qualified and independent body, such as the Advanced Television Test Center ("ATTC"). KM submits that the studies submitted by RegioNet do not meet that criteria, and are not a valid basis for amendment of the Commission's rules, for a variety of

² See Fred Daniel d/b/a Orion Telecom, DA 99-485, 14 FCC Rcd 3909 (Public Safety and Private Wireless Division 1999)("Orion"). Orion establishes that existing LPTV stations on Channel 13, such as WOCK-LP, are entitled to interference protection from AMTS stations. Id.

reasons set forth herein and in the attached Engineering Statement.³ Any amended rules should also still ensure that no actual interference would be predicted to occur to any television Channel 13 station.

II. The Studies Submitted By RegioNet Are Flawed In Several Respects.

4. As discussed more fully in the Engineering Statement, the studies submitted by RegioNet⁴ are flawed in several respects, and therefore are not a valid basis on which to amend the interference protection rules.

A. The Hull Study Relies Too Heavily On The Singular Field Experiences In Los Angeles At Santiago Peak.

5. The Hull Study is based entirely on single limited study of interference in Los Angeles under test conditions for interference by AMTS service to Channel 13 station KCOP(TV), Los Angeles, California. The Los Angeles test was conducted under conditions which generally would not be replicated in other areas, and therefore the Hull study is not a valid study on which to base amendment of the Commission's interference protection rules.⁵

³ See Engineering Statement on Behalf of KM Communications, Inc. Concerning RegioNet's Petition for Rule Making, dated July 1999 and prepared by Cohen, Dippell & Everist, P.C. (the "Engineering Statement"), a copy of which is attached hereto.

⁴ See Analysis of the Potential for Interference to Television Reception of Channel 13 by Base Station Transmitters in the Automated Maritime Telecommunications System (AMTS), dated April 16, 1999 and prepared by Professor A.E. Hull, California State Polytechnic University, Department of Electrical and Computer Engineering (the "Hull Study"), attached to the Petition as Exhibit I, and Analysis of Potential Interference from Automated Maritime Telecommunications Service to NTSC TV Receivers, dated April 1999 and prepared by Davidson Consulting Engineering (the "Davidson Study"), attached to the Petition as Exhibit II.

⁵ KM notes that the Commission previously has discounted the precedential value of the Los Angeles/Santiago Peak example. See Orion at n.30.

KM understands that in the Los Angeles/Santiago Peak example, the AMTS base station transmitters were located at Santiago Peak, which is in a remote and fairly unpopulated area, as well as co-located with the KCOP(TV) transmitter.⁶

6. The lack of population within approximately a five mile radius of the AMTS base station transmitter minimized the potential for interference. KM submits that while the location of AMTS base station transmitters in largely unpopulated areas is a good practice, it is a practice often not followed by AMTS licensees, who more and more are focusing less on providing a true "maritime" service and instead are positioning their services as more of a cellular-like service for land-based mobile stations. In contrast, when an AMTS applicant proposed to locate a new AMTS station in downtown Chicago -- but not co-located with WOCK-LP -- hundreds of thousands of persons were within the immediate vicinity of the proposed AMTS base station transmitter, and over 2 million persons within WOCK-LP's Grade B contour that were predicted to receive interference. See Orion at ¶ 3.

7. KM understands that another AMTS base station transmitter in the Los Angeles example was co-located with KCOP(TV). Both KM and the Commission have recognized the benefits that co-location offers in reducing the potential for actual interference by AMTS stations to television Channel 13 stations. See Orion at ¶ 6 and n.18; see also Engineering Statement at 4. As recognized in Orion, KM reached agreement with another AMTS applicant over a proposed new AMTS station in Chicago after the applicant, Paging Systems, Inc. ("PSI"),

⁶ KM notes that the Hull Study does not appear to address the relative locations of the AMTS base station transmitters to the television Channel 13 transmitter; KM bases its understanding on conversations with its consulting engineers, who apparently are familiar with the circumstances in that case.

agreed to co-locate its AMTS station with WOCK-LP atop the John Hancock Building, while RegioNet's predecessor company, Orion, declined to do so. Orion at ¶ 6. As set forth below, KM believes that the Commission should study and consider whether the public interest would be served by further encouraging co-location as a means of reducing the potential for actual interference by AMTS stations.

B. RegioNet's Studies Assume Prematurely That Free Over-The-Air Analog Television Service Is Dead.

8. KM submits that the studies submitted by RegioNet both put undue emphasis on the use of cable television and the advent of digital television ("DTV") services, and assume prematurely that free, over-the-air analog television service is essentially dead.

9. Both of RegioNet's studies make much of the fact that some viewers subscribe to cable television service, and therefore there should be less concern with interference by AMTS to over-the-air reception of television Channel 13 stations. See Hull Study at 6-7 (noting that 42 of the 53 receivers tested in their field study in Los Angeles were connected to cable television service); Davidson Study at 2, 12. KM submits that the fact that the field tests conducted in the Hull Study were on receivers that were largely connected to cable television service is but further evidence that the study is flawed, and an invalid basis for any rule amendments. The Commission has a long tradition of rules and policies designed to protect and encourage a free over-the-air television broadcast service, intended to ensure the distribution of this important medium of mass communication to the broadest possible array of audiences (including viewers that cannot afford or who decline to pay for cable television service), which is conveniently ignored by RegioNet.

10. RegioNet also emphasizes that DTV is coming, and therefore that AMTS protection to analog National Television System Committee ("NTSC") stations will no longer be necessary. See Davidson Study at 11. KM notes that the conversion to DTV will be completed no earlier than the year 2006, a date that even the Commission acknowledges could be extended if necessary, and for LPTV stations such as WOCK-LP it could be even later. Therefore, appropriate rules to protect against AMTS interference to analog NTSC television Channel 13 stations must be retained until the DTV transition is completed, rather than eliminated.

C. Some Testing Methods And Assumptions In RegioNet's Studies Are Flawed, Invalidating Their Conclusions.

11. As documented further in the Engineering Statement, many of the testing methods and assumptions in RegioNet's studies are flawed. Contrary to the Commission's correct approach in its prior studies, where tests were conducted to ensure no interference to even the worst existing receiver some viewers may still use, the Hull Study and its results are based only on interference perceptible with an "average" receiver. See Engineering Statement at 2; Hull Study at 5, 11. Indeed, RegioNet's own data demonstrates that some current receivers have poorer reception characteristics than the receivers tested by the Commission years ago, suggesting that stronger interference rules may be necessary, not less conservative rules (or the elimination of the rules altogether). See Engineering Statement at 2. KM submits that the viewers with the poorer quality receivers likely are the viewers that are least able to afford cable television service, and therefore are the most likely viewers to be affected by actual interference by AMTS; such viewers should not be treated like second class citizens simply because they are not able to purchase new television sets.

12. RegioNet's studies were also based on a single source of AMTS interference, even though in actual operation typically there is more than one source of AMTS interference, often at several adjacent frequencies, further increasing the potential interference. Id. RegioNet also used inappropriate viewing distances in evaluating "just perceptible interference", without appropriate consideration for the television screen diameter. Id. at 3. Even though the Hull Study claimed to evaluate the perceptible interference on television sets with screens ranging from as small as 9 inches in diameter to as wide as 51 inches in diameter, all of the tests were conducted from a viewing distance of 10 to 12 feet. See Hull Study at 4. At that distance, it would be difficult for anyone to perceive the picture, much less any interference, on screens of 19 inches or less in diameter (and especially on a 9 inch diameter set). Normal viewers typically would not view such small screens at that great of a viewing distance. Similarly, at 10 to 12 feet a viewer would be too close to properly focus on a 51 inch diameter screen, again calling into question the validity of the Hull Study's methods. See Engineering Statement at 3.

13. These testing methods are further evidence of the flaws in RegioNet's studies and the bias in their testing, demonstrating that such studies are not an adequate basis for amending the Commission's rules, and that further study is required by a qualified and independent tester, using valid testing methods and assumptions plus independent professional viewers (rather than some likely biased "hired gun"), before any rule changes may be adopted.

III. RegioNet's Notification Requirement Proposal Should Be Expanded.

14. RegioNet proposes to continue with the current requirement to notify potentially affected television Channel 13 stations when an AMTS application is filed. See Petition at 11.

KM supports that requirement, and suggests that it would be improved if the notification was made on or about the date when the AMTS application is actually filed, and included delivery of a copy of the AMTS application to the Channel 13 station. Under current practices, KM has found it difficult to monitor AMTS proposals, since currently the notification often precedes the actual filing of the application by several months, and even once the application is filed and placed on Public Notice it often is difficult to obtain a copy from the Commission promptly.

IV. RegioNet's Proposed "Survey" Plan Is Wholly Inadequate.

15. RegioNet also promotes a "survey" plan, which it has used or tried to use in connection with prior applications, and suggests that it had satisfied broadcasters. See Petition at 12 and Attachment I (proposed form of notification for survey). Contrary to RegioNet's assertion, KM found its proposed survey plan wholly inadequate, primarily due to the extremely limited circulation of the notification that RegioNet proposes. RegioNet proposes to notify as few as ten and no more than 100 households, see Attachment I, of proposed new AMTS operations that may cause interference to millions of viewers. This ratio is wholly inadequate.

16. In addition to the publication of notice in all newspapers in the market,⁷ any notification and survey requirement should require notice to all households within the vicinity of the AMTS base station transmitter or any other areas where interference would be most likely

⁷ RegioNet proposes to place the advertisement in "the local community newspaper". See Attachment I at ¶ 1. KM notes that many communities have several newspapers, and that any newspaper publication requirement should require publication in all daily and weekly newspapers published in any community within any potentially affected television Channel 13 station's Grade B contour, with the goal being to warn as many persons as possible of the potential interference.

to occur, perhaps within a five mile radius would be appropriate, with notice to a substantial percentage of households even at further distances within the television Channel 13 station's Grade B contour. See Engineering Statement at 4. Affected viewers should also be directed to contact the Channel 13 station, not just the AMTS station, since it is the Channel 13 station that has the incentive to protect its signal from interference.

17. As the Commission has recognized, notifying a handful of households is simply not adequate in highly populated areas (such as Chicago, where WOCK-LP is located), particularly considering that with a small notification sample there is the risk that the notification could go only to households with no Channel 13 station viewers. See Orion at ¶ 7 and n.29. Furthermore, absent notice, there is the very real risk that existing Channel 13 viewers may simply change channels or live with the degraded reception, rather than complain, about actual interference they may experience, causing or leading to the loss of viewership that the interference protection rules are designed to prevent.

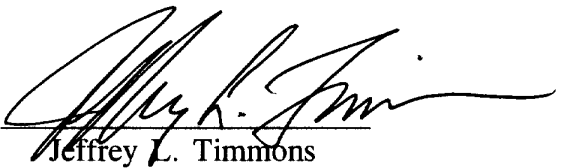
V. The Commission Should Study Reducing Interference By Co-Location.

18. As discussed herein, both KM and the Commission have recognized the potential benefits that co-location offers in reducing the potential for actual interference by AMTS stations to television Channel 13 stations. See Orion at ¶ 6 and n.18; see also Engineering Statement at 4. RegioNet's own studies also tend to support co-location. See Davidson Study at 4-5. Accordingly, KM encourages the Commission (or some other qualified independent testing body) to study the potential benefits of co-location, and develop rules which encourage co-location, if appropriate.

Wherefore, the above-premises being considered, KM respectfully requests that in the event the Commission elects to adopt a Notice for Proposed Rulemaking in this proceeding, that the Commission consider the issues raised herein and retain or adopt rules which truly protect existing television Channel 13 stations, and that the Commission proceed only after all engineering and technical studies have been conducted by the Commission (or other appropriate qualified independent testing body) as may be necessary or appropriate to ensure that AMTS stations cause no interference to television Channel 13 stations.

Respectfully submitted,

KM COMMUNICATIONS, INC.

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July 16, 1999

ENGINEERING STATEMENT
ON BEHALF OF
KM COMMUNICATIONS, INC.
PETITION FOR RULE MAKING
CONCERNING REGIONET'S
PETITION FOR RULE MAKING

JULY 1999

COHEN, DIPPELL AND EVERIST, P.C.
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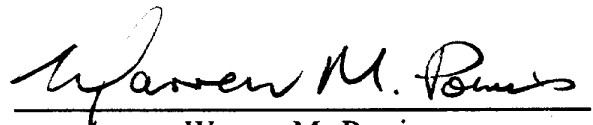
Warren M. Powis, being duly sworn upon his oath, deposes and states that:

He is a graduate electrical engineer of the University of Canterbury, New Zealand, a Registered Professional Engineer in the District of Columbia, the State of Virginia, the State of South Carolina, and Vice President of Cohen, Dippell and Everist, P.C., Consulting Engineers, Radio - Television, with offices at 1300 L Street, N.W., Suite 1100, Washington, D.C. 20005; previously employed for 15 years with the New Zealand Broadcasting Corporation; a member of the Institution of Professional Engineers New Zealand (IPENZ), the Association of Federal Communications Consulting Engineers (AFCCE), and the National Society of Professional Engineers (NSPE).

That his qualifications are a matter of record in the Federal Communications Commission;

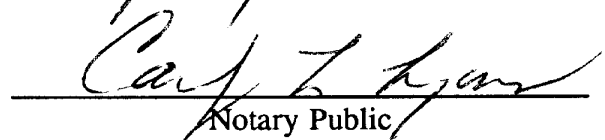
That the attached engineering report was prepared by him or under his supervision and direction and,

That the facts stated herein are true of his own knowledge, except such facts as are stated to be on information and belief, and as to such facts he believes them to be true.



Warren M. Powis
District of Columbia
Professional Engineer
Registration No. 8339

Subscribed and sworn to before me this 15th day of July, 1999.


Notary Public

My Commission Expires: 2/28/2003

This engineering statement has been prepared on behalf of KM Communications, Inc. in support of its comment on a Petition for Rule Making ("Petition") filed by RegioNet Wireless License, LLC, a subsidiary of Orion Telecom ("RegioNet") which requested that the Commission reduce the regulatory burdens placed on applicants for Automated Marine Telecommunications System ("AMTS") stations.

AMTS stations which operate on 217 to 218 MHz (base stations) and 219-220 MHz (mobile stations) have the potential to interfere with the off-air reception of television receivers tuned to 210-216 MHz TV Channel 13 (adjacent-channel interference) and to 192-198 MHz TV Channel 10 (half I.F. beat effects). The methods of evaluating the potential for interference were developed by R. Eckert of the FCC's Office of Science and Technology in OST Technical Memorandum FCC/OST TM82-5, July 1982.

Table I of TM82-5 specified the interference protection ratios to TV Channels 13 and 10 for the poorest observed TV receive performance among its samples of five different receiver types. Table I, therefore, provided a reasonable basis for protecting all TV receivers.

RegioNet 1999 Tests

RegioNet attached Exhibit I to its Petition which detailed recent interference tests to TV Channel 13 reception from a single 1 KHz-FM-modulated AMTS signal, conducted by Professor A. E. Hull of California State Polytechnic University, Department of Electrical and Computer Engineering. The Hull report indicated that observations were made on 53 television receivers tuned to Channel 13 with the single AMTS signal operated in 0.5 MHz steps between 216-220 MHz to determine the AMTS signal level that would produce "just perceptible interference".

By Hull's definition, University staff considered "just perceptible" interference to occur when the visual signal of Channel 13 appeared minimally degraded from a normal viewing distance of 10-12 feet. The screen sizes of the TV receivers under test varied from 9 inches to 51 inches.

Hull's tests on 53 receivers were performed while receiving the Channel 13 programming of KCOP, Los Angeles, California. Only 11 of those 53 receivers were tested with an off-air signal. The remaining 42 receivers tested received the KCOP programming via cable television systems.

Hull's test setup imported the Channel 13 signal (cable TV-or-antenna) attenuated and combined with single AMTS interferer via a matching pad to an A-B switch. The A-B switch fed either the Sadelco signal meter or the television receiver under test. It is noted that the Sadelco meter was configured to measure the average voltage in a 4 MHz band of Channel 13 (210-216 MHz).

Hull noted on Page 6 that the cable TV power received in some homes in the Placentia, Fullerton, Arcadia, and Irvine areas ranged from -68 to -78 dBm.

Comments on RegioNet's Report

1. The Commission in TM82-5 chose to use the poorest observed TV receiver performance out of 5 receiver types as a basis for proper protection of Channel 10 and Channel 13 reception against AMTS interference.

RegioNet use of "average" 1999 data is, therefore, inappropriate.

RegioNet's own measurement data demonstrates that its poorest receiver is actually 2 dB to 4 dB worse than the poorest receiver type documented by the FCC in its 1975 tests at the AMTS frequencies 217.0 and 217.5 MHz. RegioNet claim of a 25 to 38 dB improvement in performance is, therefore, invalid.

2. RegioNet's recent measurements were taken with a single interferer. Actual AMTS operations consist of multiple carriers which extend from 217.0 to 217.5 and 217.5 to 218.0 MHz. The impact of cross modulation effects from multiple carriers on TV reception has not been addressed.

3. RegioNet utilized a "normal" viewing distance of 10 to 12 feet for a wide range of screen sizes of 9 to 51 inches for its determination of minimal degradation. Since the acuity of the normal eye is 1/60 of a degree, it will be unable to resolve the full picture content of small television screens at this distance.

For the NTSC 4:3 screen ratio, the optimum viewing distances for various screen diameters are as follows:

<u>TV Screen Diameter</u> inches	<u>Optimum Viewing Distance</u> feet
9	3.2
13	4.7
19	6.8
27	9.7
31	11.0
51	18.0

Accordingly, RegioNet's conclusions based on its test methodology are highly suspect. The human eye can resolve less than 50% of the vertical and 50% of the horizontal resolution (25% of the viewing area) of the 9, 11, and 13 inch receivers; over one-third of the receivers documented by RegioNet. Further, only 9 of 47 receivers documented (27 inch diameter or greater) are properly viewable at 10 feet viewing distance.

4. Since the FCC has mandated the transition to digital television (DTV), tests on NTSC reception and DTV reception using the new generation of digital television receivers should also be undertaken. Appropriate cooperative tests could be undertaken at a site such as the Advanced Television Test Center ("ATTC") in Alexandria, Virginia, using expert viewers. Potential interference, color beat, and other effects can be researched and tested using ATTC's existing test-bed setup conducted at optimum viewing distances for existing NTSC and DTV receivers.

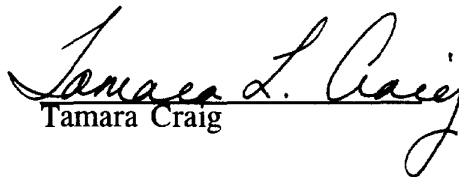
5. RegioNet claims that the Eckert report is 18 dB conservative on the difference between the polarization of TV and AMTS antennas. Depolarization of signal sources in urban and heavily treed areas results in reduced ability to reject unwanted interfering signals. Furthermore, TV Channel 13 stations can operate with circular polarization resulting in no cross-polarization advantages.
6. AMTS transmitter sites should be located away from urban areas. RegioNet's example of Orion's AMTS Santiago Peak, California, site is a good example; rurally located and well removed from any significant population.
7. AMTS transmitter sites can also be collocated with TV Channel 13 stations including low power television ("LPTV") stations. If LPTV stations utilize directional antennas, an associated directional AMTS station should be workable at an appropriate AMTS power level with a workable ratio to the LPTV power level.
8. There are no means for TV viewers to identify or recognize the source of AMTS interference to Channel 13 reception. Viewers simply "live with it" or tune to another channel. A suggested revision of the household notification procedure for AMTS stations is as follows.

0 to 5 miles	All Households
5 to 7 miles	50% of all households
7 to 10 miles	25% of all households

CERTIFICATE OF SERVICE

I, Tamara Craig, hereby certify that on or before this 16th day of July, 1999, copies of the foregoing "Comments of KM Communications, Inc." have been served by first-class United States mail, postage prepaid, upon the following:

Dennis C. Brown, Esq.
126/B North Bedford Street
Arlington, Virginia 22201


Tamara Craig